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The Trusted Integrator for Sustainable Solutions

August 28, 2015

U.S. Environmental Protection Agency Region III
Mr. Greg Ham
On-Scene Coordinator
1650 Arch Street
Philadelphia, Pennsylvania 19103

Subject: Draft Trip Report

Project: Miller Chemical Homewell Sampling Site
EPA Contract Nos.: EP-S3-10-05 and EP-S3-15-02
TDD Nos.: WS01-15-06-001 and W501-15-07-026
Document Control No.: W0031.1A.01393

Dear Mr. Ham:

Weston Solutions, Inc. (WESTON®) is submitting the Draft Trip Report for the Miller Chemical Homewell Sampling Site. This Trip Report summarizes the residential well sampling activities and analytical results of the sampling conducted on June 16, 2015. If you have any questions regarding this report, please call me at (610) 701-3191.

Sincerely,

WESTON SOLUTIONS, INC,

Ex. 4 - CBI

Project Task Lead

Enclosure

cc: TDD File

Ex. 4 - CBI (WESTON)

DRAFT TRIP REPORT

MILLER CHEMICAL HOMEWELL SAMPLING HANOVER, ADAMS AND YORK COUNTIES, PENNSYLVANIA

**EPA CONTRACT NOS.: EP-S3-10-05 and EP-S3-15-02
TECHNICAL DIRECTION DOCUMENT NOS.: WS01-15-06-001 and W501-15-07-026
DOCUMENT CONTROL NO.: W0031.1A.01393**

Prepared For:



**U.S. Environmental Protection Agency Region III
Hazardous Site Cleanup Division
1650 Arch Street
Philadelphia, PA 19103**

Prepared By:



**Weston Solutions, Inc.
1400 Weston Way
West Chester, PA 19380**

August 2015

DRAFT

TRIP REPORT

Miller Chemical Homewell Sampling Hanover, Adams and York Counties, Pennsylvania

Ex. 4 - CBI

WESTON – START Removal Scope of Work Manager

Ex. 4 - CBI

8/28/2015

Date

WESTON – START Quality Assurance Manager

Ex. 4 - CBI

Date

USEPA – On-Scene Coordinator
Greg Ham

Date

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/L	micrograms per liter
DO	dissolved oxygen
EPA	United States Environmental Protection Agency
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
ORP	Oxidation Reduction Potential
OSC	On-Scene Coordinator
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedure
START	Superfund Technical Assessment and Response Team
TAL	Target Analyte List
TDD	Technical Direction Document
TOC	total organic carbon
UFP	Uniform Federal Policy
VOC	volatile organic compound
WESTON®	Weston Solutions, Inc.

1.0 INTRODUCTION

Under the Eastern Area Superfund Technical Assessment and Response Team (START) Contract Nos. EP-S3-10-05 and EP-S3-15-02, Technical Direction Document (TDD) Nos. WS01-15-06-001 and W501-15-07-026, the U.S. Environmental Protection Agency (EPA) Region III tasked Weston Solutions, Inc. (WESTON®) to collect residential drinking water samples from residences located along the Conewago Creek downstream from the Miller Chemical Homewell Sampling Site (the Site) located in Hanover, York County, Pennsylvania. The residential sampling locations are located in Adams County, Pennsylvania. Sampling activities were conducted under TDD No. WS01-15-06-001. This report was prepared under TDD No. W501-15-07-026.

The objective of this sampling event was to determine if contaminants associated with the Site and associated fire suppression runoff may have impacted residential drinking water wells. WESTON collected residential well water samples at four residential properties located downstream of the Site along, or adjacent to, Conewago Creek. At one of the residences, a groundwater sample from a natural spring was also collected. At each sampling location, water quality measurements were collected. All sampling locations were identified and selected by the EPA On-Scene Coordinator (OSC).

2.0 BACKGROUND

This section describes the site location, presents a description of the Site, and discusses the site history.

2.1 SITE LOCATION

The Site is located at 120 Radio Road, Hanover, York County, Pennsylvania, as depicted on Figure 1, Site Location Map. The residential locations where samples were collected are located in Adams County, as depicted in Figure 2, Residential Sampling Locations. The coordinates of the approximate center of the Site are Latitude 39.818402° N, and Longitude 77.001022° W. Slagle Run Creek, which flows into Conewago Creek, is located adjacent to the Site to the east. The

property is bordered by commercial properties to the north, east, and south. Residential properties are located beyond to the south, and agricultural land beyond to the east.

2.2 SITE DESCRIPTION

The Miller Chemical (Miller) facility is approximately 13.23 acres. The facility includes a 96,000-square foot main building located in the approximate center of the property. This building was used for several different operations, including fertilizer and pesticide production, a laboratory, storage, packing, and as an office. Three smaller buildings were also located on the Site: a 6,300-square foot office building, 2,640-square foot maintenance building, and 1,056-square foot document storage building. Additionally, a stormwater retention pond is located on the property, northeast of the main building. The areas surrounding the former buildings are landscaped with grass and other vegetation (ENVIRON, 2015).

2.3 SITE HISTORY

The Miller property was originally used as agricultural land and was developed in the late 1930s and early 1940s. The property was bought by Union Fertilizer and utilized for the manufacturing of fertilizers. In the mid-1940s, Miller acquired the facility and continued to manufacture fertilizer in the original building formerly located at the facility. In the 1960s, operations expanded to include pesticide formulation and blending. Operations were conducted in the original building located in the northwest corner of the Site until the 1980s when the building was demolished by the means of a controlled fire. The current main building used for the blending of pesticides was constructed in the 1960s (ENVIRON, 2015).

In the 1960s, the facility was creating organochlorine pesticides, using primarily xylenes and emulsifiers. Operations shifted to blending organophosphate pesticides and carbamates, because xylenes and emulsifiers became more regulated. In the 1990s, pesticide production was phased out and operations shifted completely to fertilizer blending. Although pesticide production ceased, the facility did handle and repackage pesticides. In a period between 1984 through 2012, the main building went through many additions, and the office building located on the Site was constructed between 1968 and 1971 (ENVIRON, 2015).

On June 8, 2015, at approximately 3:40 a.m., the main building at the facility caught fire and emergency responders were alerted. To combat the fire, firefighters used a large volume of water. Efforts were made to contain the runoff water from firefighting activities in a retention pond located on the Site. Despite these efforts, runoff water traveled across agricultural fields and into Slagle Run Creek, which flows westward and connects to Conewago Creek.

3.0 SITE ACTIVITIES

On June 16, 2015, WESTON collected four residential well samples and one groundwater spring sample from four residential locations along the Conewago Creek in accordance with the Final Field Sampling Plan, Miller Chemical Fire Response (WESTON, 2015). This section discusses the sampling activities conducted during this assessment. The locations where samples were collected are depicted on Figure 2, Residential Sampling Locations.

3.1 RESIDENTIAL WELL SAMPLING

On June 16, 2015, WESTON collected four residential well samples from four residential properties located along or near Conewago Creek. The residential well locations were selected by the EPA OSC based on their proximity to the Site and to Conewago Creek. Each sample collected was analyzed for anions (nitrate, nitrite, sulfate), total organic carbon (TOC), volatile organic compounds (VOCs), total cyanide, and Target Analyte List (TAL) metals.

All residential well samples were collected in accordance with WESTON Standard Operating Procedure (SOP) No. 202, Residential Groundwater Sampling (WESTON, 2011a). At each sampling location, WESTON purged the well for at least 15 minutes prior to collecting the sample. Samples from all residential wells were collected from as close to the well head as reasonably possible prior to any filtration or water treatment. Water quality measurements (temperature, pH, oxidation/reduction potential [ORP], dissolved oxygen [DO], conductivity, and turbidity) were collected at each location with a YSI multi-parameter quality meter prior to sampling. Table 1 summarizes the residential well information, any treatment system observed during sampling, and the water quality measurements collected at each location. Samples were collected directly from the sample location into the appropriate sample containers for each analytical suite.

3.2 GROUNDWATER SPRING SAMPLING

On June 16, 2015, at location RW-001, a sample was collected from a natural groundwater spring. The natural groundwater spring sample was collected in accordance with WESTON SOP No. 203, Surface Water Sampling (WESTON, 2011b). Water was collected directly from the spring into the appropriate sample containers for each analytical suite. Water quality measurements (temperature, pH, ORP, DO, conductivity, and turbidity) were collected from the spring with a YSI multi-parameter quality meter, prior to sampling. The spring sample was analyzed for anions (nitrate, nitrite, sulfate), TOC, VOCs, total cyanide, and TAL metals. Table 1 summarizes the spring water quality measurements collected.

3.3 SAMPLE MANAGEMENT

All samples collected were handled and packaged in accordance with the WESTON Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (WESTON, 2010) and in accordance with the *Contract Laboratory Program Guidance for Field Samplers* (EPA, 2014). All shipping containers were properly labeled with EPA chain-of-custody seals and delivered with signed chain-of-custody forms and appropriate hazard warnings for laboratory personnel. Copies of the chain-of-custody records are provided with the Validated Analytical Results Packages in Appendix A. As appropriate, samples were preserved, and all samples were kept on ice during delivery to the assigned laboratories.

4.0 ANALYTICAL RESULTS

This section summarizes the analytical results for the samples collected at the Site by WESTON during this evaluation. All samples were assigned and analyzed by the WESTON-procured Tier IV laboratory for the following analyses: anions (nitrate, nitrite, sulfate), TOC, VOCs, total cyanide, and TAL metals. Analytical results are summarized in Table 2. Validated Analytical Results Packages are provided in Appendix A.

4.1 RESIDENTIAL WELL RESULTS

VOCs were not detected in any of the residential well samples collected, with the exception of tetrachloroethene at a concentration of 1.1 micrograms per liter ($\mu\text{g/L}$), in the sample collected

from residential well RW-002, as shown in Table 2. This result is below the EPA Maximum Contaminant Level (MCL) of 5 µg/L for tetrachloroethene.

Nitrate concentrations ranged from 2 milligrams per liter (mg/L) in the residential well sample collected from location RW-001 to 8.4 mg/L in the residential well sample collected from RW-004. Sulfate concentrations ranged from 3.8 mg/L in the residential well sample collected from location RW-002 to 26 mg/L in the residential well sample collected from location RW-001. Nitrite was not detected in any of the residential well samples collected. Concentrations of nitrate, sulfate, or nitrite were not detected at concentrations exceeding their respective MCLs, as shown in Table 2.

Total cyanide was only detected at concentrations of 0.0050 mg/L and 0.0044 mg/L in the residential well samples collected from locations RW-001 and RW-002, respectively. Both of these results are below the MCL of 0.2 mg/L for total cyanide, as shown in Table 2. Additionally, the cyanide sample results were qualified during data validation as being assumed to be a blank contaminant.

TOC concentrations ranged from 1.4 mg/L in the residential well sample collected from location RW-002 to 34 mg/L in the residential well sample collected from location RW-004.

Metals were not detected at concentrations exceeding their respective MCLs in any of the residential wells sampled.

4.2 GROUNDWATER SPRING RESULTS

VOCs were not detected in the groundwater spring sample collected from location RW-001.

Nitrate and sulfate were detected at concentrations of 3.4 and 5 mg/L, respectively, in the groundwater spring sample collected from location RW-001; both concentrations are below their respective MCLs. Nitrite was not detected in the groundwater spring sample collected from location RW-001.

Total cyanide was not detected in the groundwater spring sample collected from location RW-001.

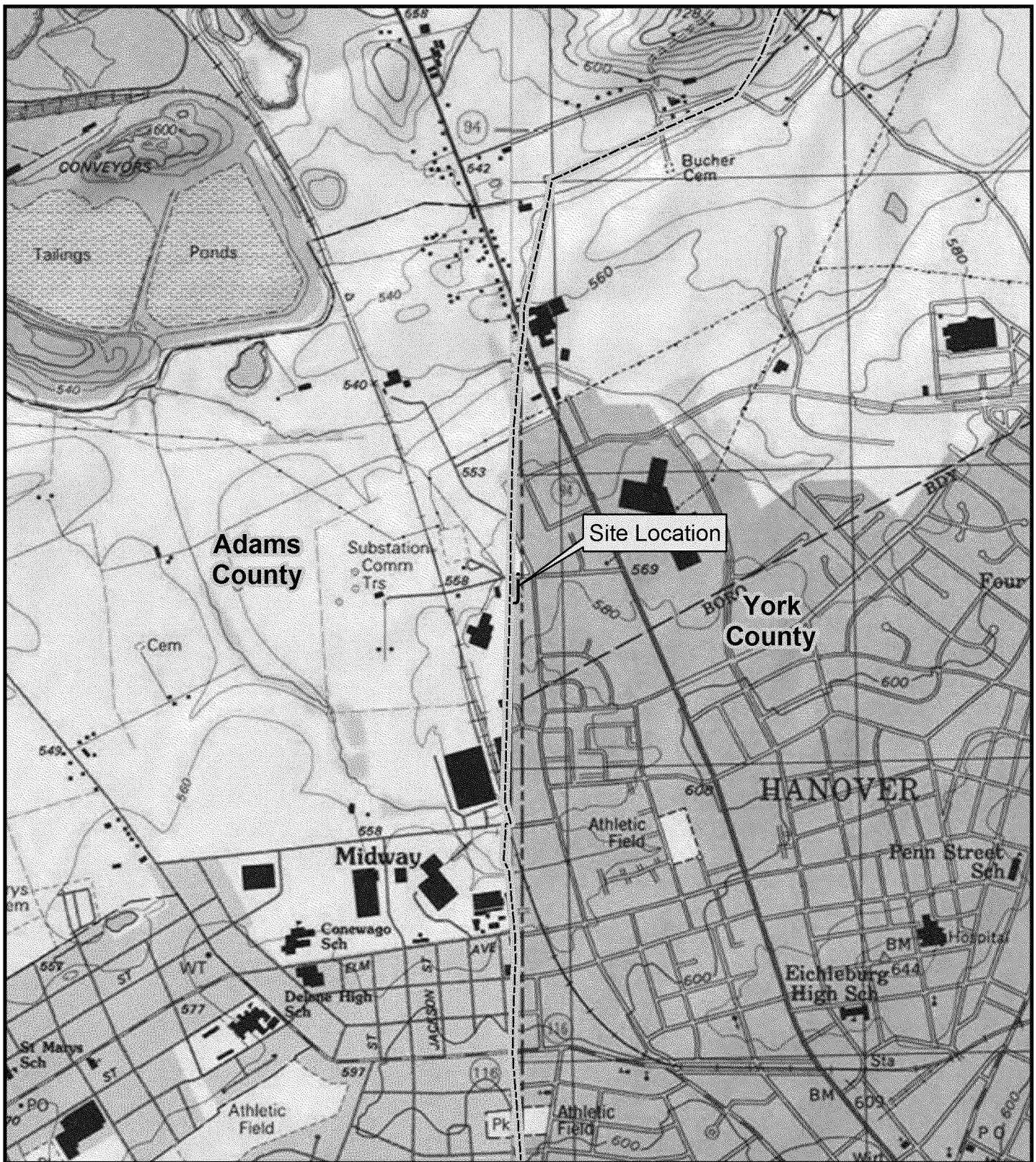
TOC was detected at a concentration of 19 mg/L in the groundwater spring sample collected from location RW-001.

Metals were not detected at concentrations exceeding their respective MCLs in the groundwater spring sample collected from location RW-001.

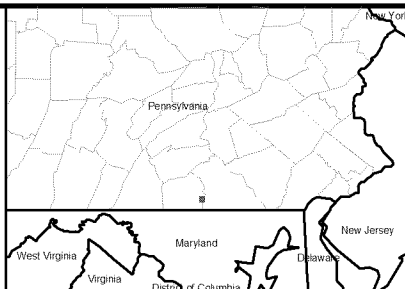
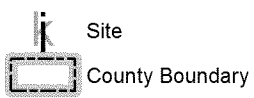
5.0 REFERENCES

- ENVIRON (Ramboll Environ Inc.). 2015. *Sampling and Analysis Plan for Miller Chemical Facility*. June.
- EPA (United States Environmental Protection Agency). 2014. *Contract Laboratory Program Guidance for Field Samplers*. EPA-540-R-014-013. October.
- WESTON (Weston Solutions, Inc.). 2010. EPA Region III START 4 Program-Wide UFP QAPP. Final. December.
- WESTON (Weston Solutions, Inc.). 2011a. Residential Groundwater Sampling. SOP No. 202. August.
- WESTON (Weston Solutions, Inc.). 2011b. Surface Water Sampling. SOP No. 203. October.
- WESTON (Weston Solutions, Inc.). 2015. Final Field Sampling Plan, Miller Chemical Fire Response. June.

FIGURES



Legend



USGS 7.5 Minute Quadrangle
Hanover PA, 1975, revised 1984.
McSherrystown PA, 1975, revised 1984

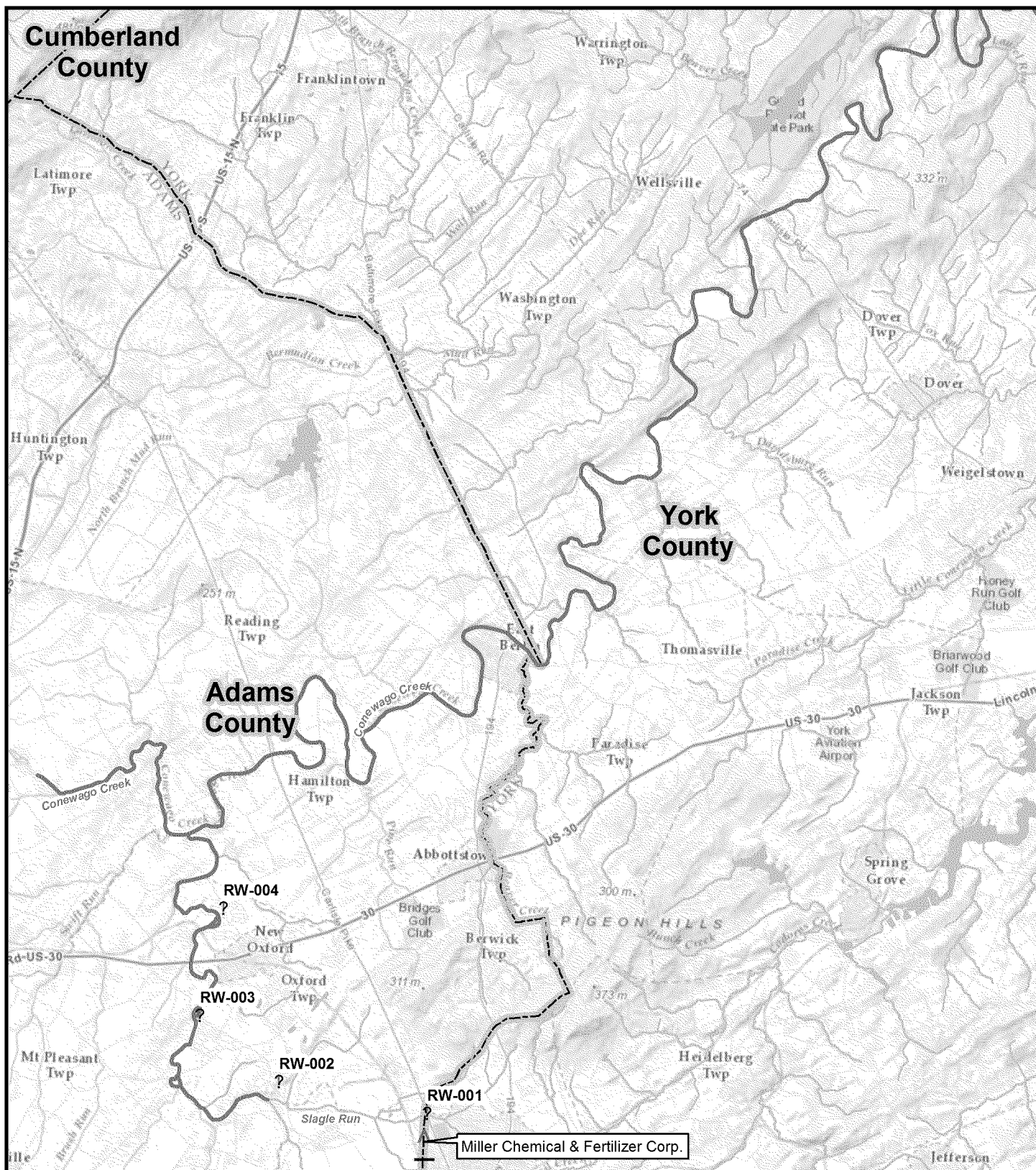
Coordinate System:
WGS84 UTM Zone 18N Feet
0 2,000
Feet

Miller Chemical Homewell Sampling Site
Hanover, York County, PA

Figure 1
Site Location Map

TDD#: WS01-15-06-001/07-026
Contract: EP-53-10-05/15-02
Prepared: 8/27/2015



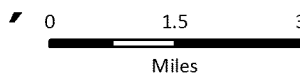


Legend

- Miller Chemical & Fertilizer Corp.
- Residential Sample Locations
- Conewago Creek
- Water Features
- Water Body
- County Boundary

Background: ESRI, USGS, DigitalGlobe Mapping Service.

Coordinate System:
WGS84 UTM Zone 18N Feet



Miller Chemical Homewell Sampling Site
Hanover, York County, PA

Figure 2
Residential Sampling Locations

TDD#: WS01-15-06-001/07-026
Contract: EP-53-10-05/15-02
Prepared: 8/26/2015





TABLES

Table 1 - Sample Information and Water Quality Measurements
Miller Chemical Homewell Sampling Site

Sample Location/Type	RW-001/Groundwater Spring	RW-001/Residential Well	RW-002/Residential Well	RW-003/Residential Well
SampleDate	16-Jun-15	16-Jun-15	16-Jun-15	16-Jun-15
SampleTime	10:00	09:58	12:10	09:17
Sample #	MCFR-061615-RS-001	MCFR-061615-RW-001	MCFR-061615-RW-002	MCFR-061615-RW-003
CLP Sample #	CODE5	CODE0	CODE1	CODE2
Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Temperature (°C)	15.26	13.14	14.35	7.97
pH	6.8	7.25	6.76	5.84
Dissolved Oxygen (mg/L)	9.01	9.66	11.28	13.54
Conductivity (µS/cm)	312	292	259	94
ORP	168.8	190	220.9	237.6
Turbidity	NM	NM	6.4	6.5
Well Depth (feet)	N/A - Spring	462	300	100
Treatment	None	None	Sediment Filter	Softener

Notes:

µS/cm - microsiemens per centimeter

Well Depth is reported from resident at time of sampling

mg/L - milligrams per Liter

MCFR - Miller Chemical Fire Response

NM - Not Measured

RW - Residential Well

RS - Residential Spring

Table 1 - Sample Information and Water Quality Measurements
Miller Chemical Homewell Sampling Site

Sample Location/Type	RW-004/Residential Well	RW-004/Residential Well
SampleDate	16-Jun-15	16-Jun-15
SampleTime	10:40	10:45
Sample #	MCFR-061615-RW-004	MCFR-061615-RW-104
CLP Sample #	CODE3	CODE7
Sample Type	Field Sample	Field Duplicate of CODE3
Temperature (°C)	13.29	13.29
pH	5.82	5.82
Dissolved Oxygen (mg/L)	11.22	11.22
Conductivity (µS/cm)	443	443
ORP	229	229
Turbidity	4.9	4.9
Well Depth (feet)	Not Known	Not Known
Treatment	None	None

Notes:

µS/cm - microsiemens per centimeter

Well Depth is reported from resident at time of sampling

mg/L - milligrams per Liter

MCFR - Miller Chemical Fire Response

NM - Not Measured

RW - Residential Well

RS - Residential Spring

Table 2 - Analytical Results
Miller Chemical Homewell Sampling Site

Sample #	MCL	MCFR 061615-RS-001	MCFR 061615-RW-001	MCFR 061615-RW-002	MCFR 061615-RW-003	MCFR 061615-RW-004	MCFR 061615-RW-104	MCFR 061615-TB-001	
Location		RW-001	RW-001	RW-002	RW-003	RW-004	RW-004	NA	
CLP Sample #		CODE5	CODE0	CODE1	CODE2	CODE3	CODE7	CODE6	
Sample Type		Field Sample	Field Sample	Field Sample	Field Sample	Field Sample	Field Duplicate of CODE3	Trip Blank	
Detected Volatile Organic Compounds (all results in µg/L)									
Tetrachloroethene	5	U	U	1.1	U	U	U	U	
Acetone	N/A	U	U	U	U	U	U	7.5 J	
Metals (all results in µg/L)									
Calcium	N/A	56,000	41,000	32,000	14,000	44,000	45,000		
Iron	300*	U	U	U	27 J	U	U		
Magnesium	N/A	6,300	8,500	8,900	4,200	13,000	13,000		
Potassium	N/A	2,300	790 J	380 J	750 J	1,900	1,900		
Sodium	N/A	3,300 J-	5,700	6,500	8,900	24,000	25,000		
Aluminum	50-200*	U	U	U	U	U	U		
Antimony	6	U	1.9	U	U	U	U		
Arsenic	10	0.87 J	7.6	0.92 J	1.3	1.3	1.0		
Barium	2,000	29	130	10	3.5	76	76		
Beryllium	4	U	U	U	U	U	U		
Cadmium	5	U	U	U	U	0.045 J	U		
Chromium	100	1.3 J	1.2 J	1.6 J	3.2	1.7 J	1.9 J		
Cobalt	N/A	0.24	0.20 J	0.14 J	U	0.59	0.59		
Copper	1,300	1.9 J	4.6 J	19 J	47 J	53 J	55 J		
Lead	15	0.13 J	0.22 J	1.1	13	2.2	2.3		
Manganese	50*	U	U	U	U	U	U		
Nickel	N/A	4.8 J	3.8 J	3.1 J	3.8 J	5.3 J	5.6 J		
Selenium	0.05	U	U	U	0.93 J	U	U		
Silver	100*	U	U	U	U	U	U		
Thallium	2	U	U	U	U	U	U		
Vanadium	N/A	3.1 J	3.5 J	3.3 J	7.1 J	3.9 J	4.4 J		
Zinc	5,000*	5.2 J	3.9 J	13 J	280 J	9.8 J	9.5 J		
Anions (all results in mg/L)									
Nitrate as N	10	3.4 J+	2 J+	6.3 J+	3.7 J+	8.2 J+	8.4 J+		
Sulfate	250*	5	26	3.8	19	24	24		
Nitrite as N	1	U	U	U	U	U	U		
General Chemistry (all results in mg/L)									
Total Cyanide	0.2	U	0.0050 B	0.0044 B	U	U	U		
Total Organic Carbon	N/A	19	15	1.4	10	29	34		

µg/L - micrograms per Liter

* Secondary Drinking Water Standard

mg/L - milligrams per Liter

MCL - Maximum Contaminant Level

NA - Not Applicable

RS - Residential Spring

RW - Residential Well

U - The analyte was analyzed for but was not detected at a level greater than or equal the adjusted Contract Required Quantitation Limit for sample and method

J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

J+ - The result is an estimated quantity, but the result may be biased high.

B - The result is presumed a blank contaminant.

APPENDIX A

VALIDATED ANALYTICAL RESULTS PACKAGES
